

Work Order ID 110278

December-17-13 9:19:59 AM

110278

Page 1

Item ID: D3180-041 Accept ***N9000040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Strut Assembly
 Start Date: 12/17/13 Start Qty: 2.00 ***2*** Cust Item ID:
 Required Date: 12/17/13 Req'd Qty: 2.00 ***2*** Customer:
 Reference:

Approvals: Process Plan: ML5 Date: 12-12-13 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3180	Rev B								
100	NC BRAKE	0.00							
100									
Brake NC	Memo	0.00							
Brake NC	1-Punch Tubing to length as per Dwg D3180 using DT8313 Ensure rotate and punch one end only as per view B-B as per Dwg. D3180								
110	Small Fab	0.00							
110									
Small Fab	Memo	0.00							
Small Fab	1-Drill Ø0.203" as per Dwg D31802-Bend one side only as per Dwg D3180Identify as D3180-13-Deburr edges								
120	QC5- Inspect part completeness to step on W/O	0.00							
120									
QC	Memo	0.00							
Quality Control									

Cancelled

W

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other _____ _____ _____
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110278

Page 2

Item ID: D3180-041 Accept ***N19000040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Strut Assembly
Start Date: 12/17/13 Start Qty: 2.00 ***2*** Cust Item ID:
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
130									
Powdercoat	Memo	0.00							
Powder Coating	START TIME: _____ OVEN TEMPERATURE: _____ FINISH TIME: _____								
140	QC3- Inspect Part Finish	0.00							
140									
QC	Memo	0.00							
Quality Control									
150	Small Fab	0.00							
150									
Small Fab	Memo	0.00							
Small Fab	1-Assemble as per Dwg D3180								

DQA: _____ Date: _____



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Picklist Print

December-17-13 9:19:58 AM

Work Order ID: 110278

Parent Item: D3180-041

Parent Item Name: Strut Assembly

Start Date: 12/17/13

Required Date: 12/17/13

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP Rev:A03.01.27New issueKJ/RF
IPP Rev:B 07-06-28 Asper Rev B JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
A1449 Grommet		Purchased	No			150	Each	1,172.0000	1	2			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST278		1172							
				1487		1172							
BLRS-001 Pip Pin		Purchased	No			150	Each	15.0000	1	2			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST282		15							
				118140		9							
				118431		6							
D2022-101 Spacer		Manufactured	No			150	Each	245.0000	2	4			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST004		245							
				103016		60							
				106235		24							
				107903		80							
				92861		21							
				98450		60							
D2690-6 Lanyard		Manufactured	No			150	Each	23.0000	1	2			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST014		16							
				100513		3							
				102246		4							
				94775		9							
				ST019		7							
				109594		7							

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FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Picklist Print

December-17-13 9:19:58 AM

Page 2

Work Order ID: 110278

Parent Item: D3180-041

Parent Item Name: Strut Assembly

Start Date: 12/17/13

Required Date: 12/17/13

Start Qty: 2.00

Required Qty: 2.00

M304TR0.750W.065

Purchased

No

150

f

173.4000

3.5833

7.5437894

304 RD Tube .750 x .065W

Location

Loc Qty

Loc Code

MAT017

173.4

~~114002~~

30

118390

143.4

MS21042L3

Purchased

No

150

Each

6,342.0000

1

2

Nut

Location

Loc Qty

Loc Code

GA

194

M126333

194

ST314

28

M126036

28

ST506

793

123900

793

ST509

4000

M127304

1000

M127410

3000

ST510a

1327

M126275

8

M126333

1319

MS27039-1-10

Purchased

No

100

Each

382.0000

1

2

SCREW

Location

Loc Qty

Loc Code

GA

100

120449

100

ST305

26

122815

1

123522

18

125654

7

ST506

256

124326

10

m126474

246

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Shop Packet Print

Page 2

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FAULT CATEGORY

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Picklist Print

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Page 3

Work Order ID: 110278
Parent Item: D3180-041
Parent Item Name: Strut Assembly

Start Date: 12/17/13 Required Date: 12/17/13

Start Qty: 2.00 Required Qty: 2.00

NAS1149D0363J Purchased No 150 Each 4,179.0000 3 6
Washer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
GA	89	
124392	89	
ST294	11	
113068	11	
ST510a	4079	
m126319	4079	

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Shop Packet Print

Page 3

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WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

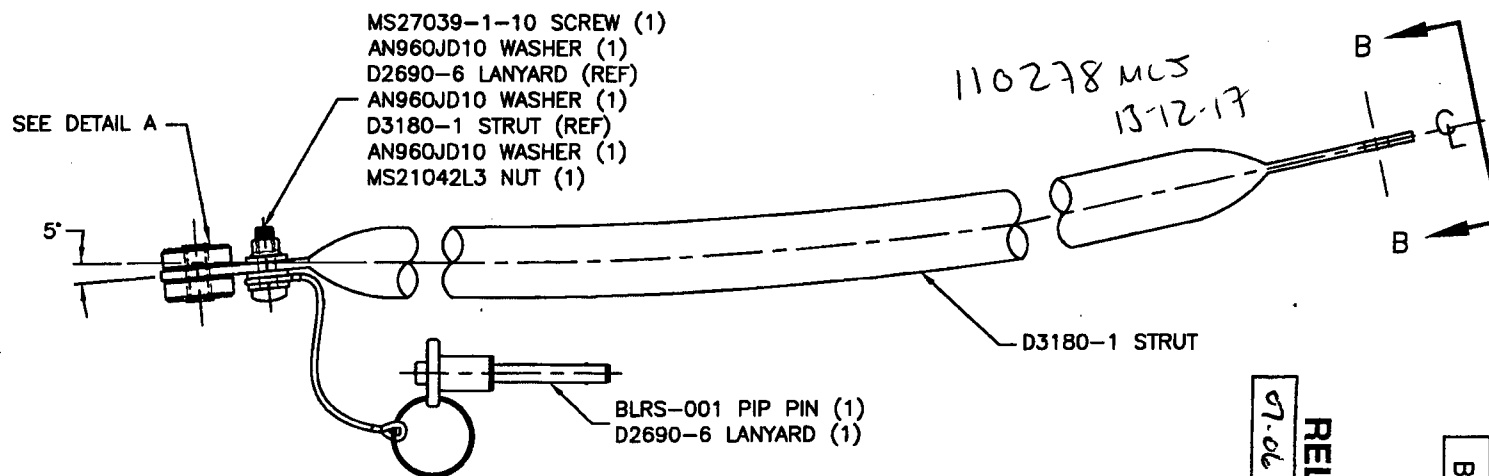
FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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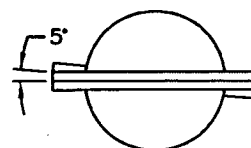


DESIGN	DRAWN BY	DART AEROSPACE LTD HAMKESBURY, ONTARIO, CANADA	
<i>[Signature]</i>	<i>[Signature]</i>	DRAWING NO.	REV. B
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	D3180	SHEET 1 OF 2
DATE 07.05.23	TITLE STRUT ASSEMBLY	SCALE 1:2	
A	03.01.06	NEW ISSUE	
B	07.05.23	CURVE ADDED	

110278 MGS
13-12-17



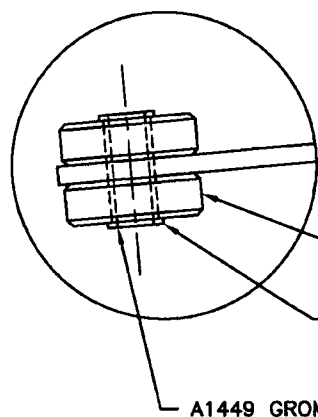
D3180-041 STRUT ASSEMBLY



VIEW B-B
SCALE 1:1

QTY	PART NUMBER	DESCRIPTION
X	D3180-041	STRUT ASSEMBLY
1	D3180-1	STRUT
1	D2690-6	LANYARD
2	D2022-101	SPACERS
3	AN960JD10	WASHER
1	MS27039-1-10	SCREW
1	BLRS-001	PIP PIN
1	MS21042L3	NUT
1	A1449	GROMMET

SEE DETAIL A



DETAIL A
SCALE 1:1

- MS27039-1-10 SCREW (1)
- AN960JD10 WASHER (1)
- D2690-6 LANYARD (REF)
- AN960JD10 WASHER (1)
- D3180-1 STRUT (REF)
- AN960JD10 WASHER (1)
- MS21042L3 NUT (1)

- BLRS-001 PIP PIN (1)
- D2690-6 LANYARD (1)

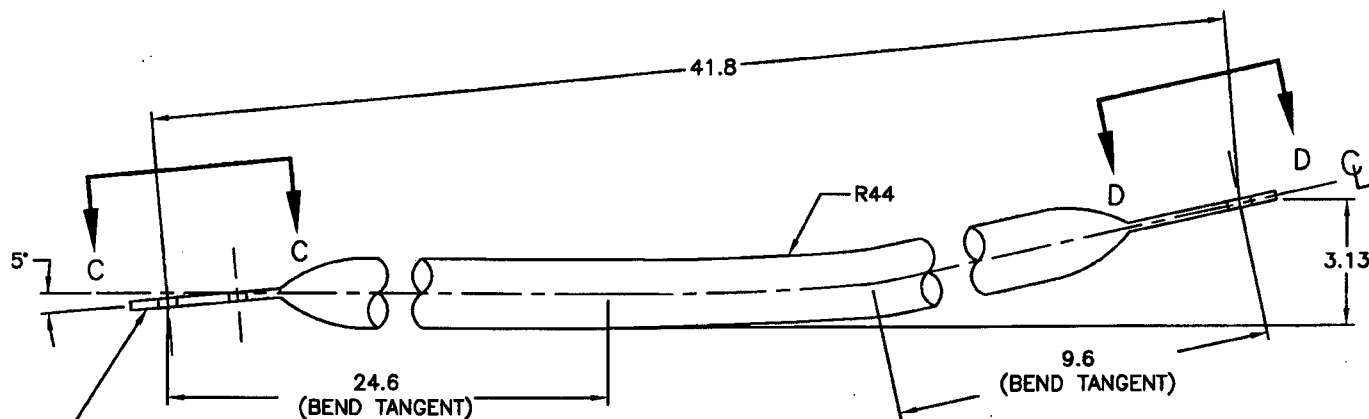
- D2022-101 SPACER
(2 PLACES)

- SWAGE D2022-101 SPACERS ONTO
D3180-1 STRUT USING A1449 GROMMET
(1 PLACE)

- A1449 GROMMET
(REF)

DART

DESIGN	<i>[Signature]</i>	DRAWN BY	<i>[Signature]</i>	DART AEROSPACE LTD HAMKESBURT, ONTARIO, CANADA
CHECKED	<i>[Signature]</i>	APPROVED	<i>[Signature]</i>	REV. B
DATE	07.05.23	TITLE	STRUT ASSEMBLY	SHEET 2 OF 2
				SCALE 1:2



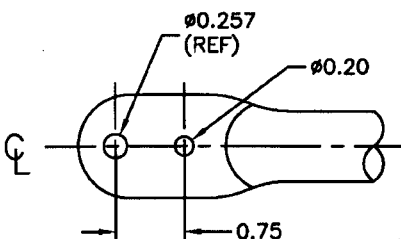
D3180-1 STRUT

USE PUNCH DT8117
BOTH ENDS
(DIMS PER SPEC. CONTROL DWG D2638)

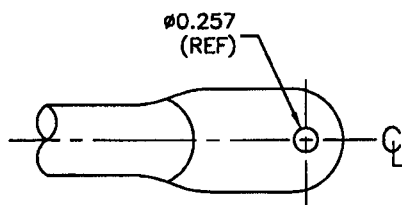
RELEASED
07.06.28

NOTES

- 1) MATERIAL: AISI 304/316/318 SS TUBE,
Ø0.75 X 0.065 WALL
(REF. DART SPEC M304TR0.750W.065)
- 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART
QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS
OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 6) IDENTIFY WITH PART P/N "D3180-041" USING
FINE POINT PERMANENT INK MARKER



VIEW C-C



VIEW D-D